scale(αx, αy, αz)

Use the scale, translate, rotate functions when creating new objects.

Implement glutMouseFunc() and glutMotionFunc()

They must have the same method signature as is outlined in the notes

convert the points in 2d into points in 3d. If you click in the middle of the screen, the coordinates would be x = 0, y = 0, z = 1.

Also, the pixels must be converted into the canonical view volume. So if you click in the middle of a 512x512 screen, it should be converted to (0, 0) for openGL.

The radius of the “circle” which we click and drag is 1. The radius is r2 = x2 + y2 + z2

Don’t do: float z = sqrt(1-x\*x – y\*y)

Calculate 1-x\*x-y\*y first. If it’s negative, don’t do anything.

If it’s not negative, carry on.

How to determine which vector to rotate around based on click and drag?  
- Cross product of both vectors, which gives the vector perpendicular to both vectors.

Vector 1 of cross product is origin to original click point,

Vector 2 of cross product is origin to point of release.

V1 X V2 = orthogonal vector

V1 dot V2 = |V1| |V2| cos θ

arccos(θ) can be bad… If floating point number is >1 or <-1, change it back to 1 or -1.

Continue spinning is from idle function